



F.D.S. DISPOSAL INC.

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January 12, 2011

Wendy Taylor, Executive Office Manager
Lake County Administration
315 W. Main St.
Tavares, FL 32778

Dear Wendy

Please find the enclosed information you requested from my compost presentation to the Alternative Waste Committee on January 10, 2011. Please express my thanks to the BOCC for the opportunity to make this presentation, I think the BOCC idea to appoint a committee was an excellent idea. If I can ever be of any assistance, please feel free to call.

Sincerely,

Randy Messer
Government Affairs Manager

COUNTY MANAGER'S

FEB 10 2011

OFFICE



COMPOST FACILITY

Nantucket Compost Facility



Peninsula Compost Company



Nantucket Recycling

COMPOST FACILITY

92% Recycling Rate

Highest Recycling Rate In Nation

Carbon Credits



Peninsula Compost Company



COMPOST FACILITY

Wilmington Organic Recycling Center

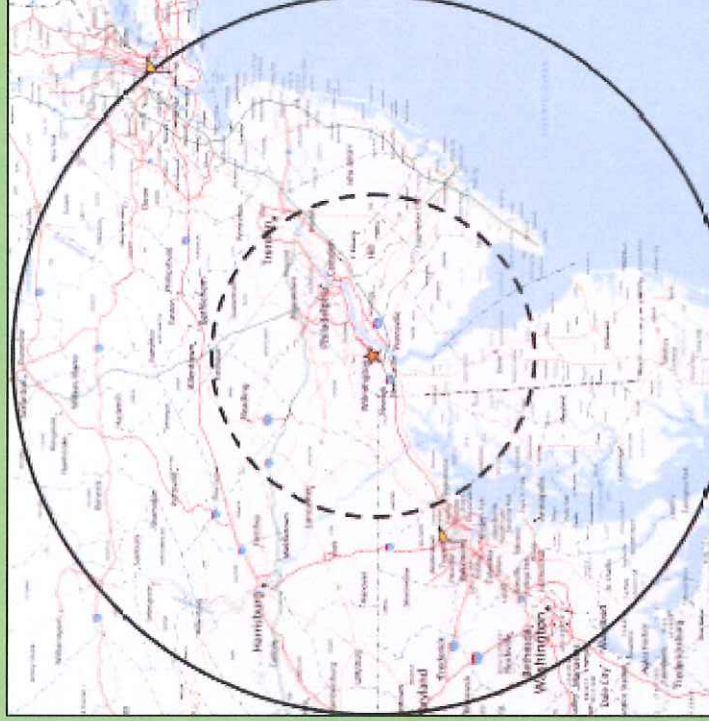


Peninsula Compost Company



Geographic Market

COMPOST FACILITY



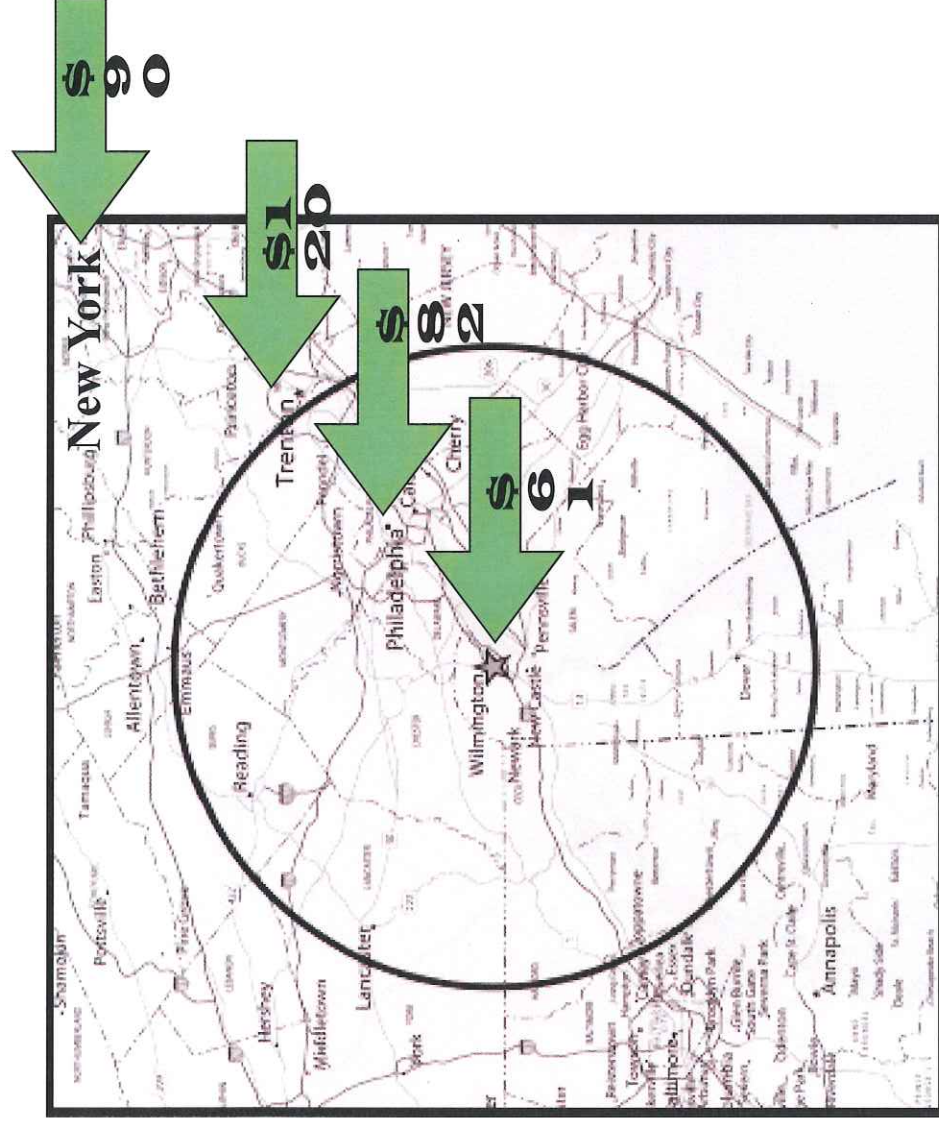
Food Waste	1.5 M TPY
Yard Waste	500,000 TPY

Peninsula Compost Company



Area Tip Fees

COMPOST FACILITY



Peninsula Compost Company



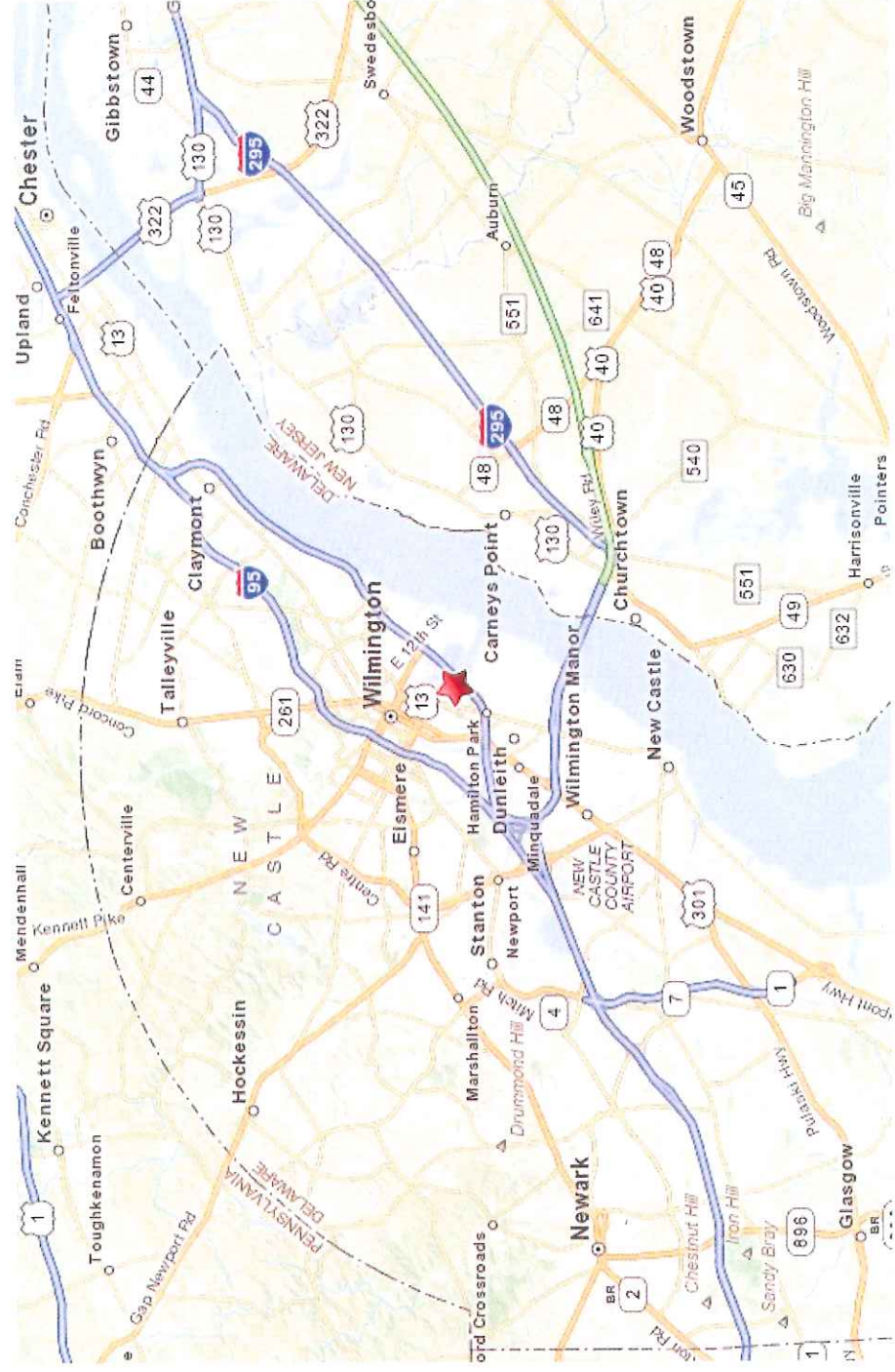
Site Specific Issues

- Zoning - Heavy Industrial
- Proximity to Residential
- DNREC Permit Requirements
- Neighborhood Support - Community Benefits Agreement

COMPOST FACILITY



Aerial Map & Road Map



Peninsula Compost Company

COMPOST FACILITY



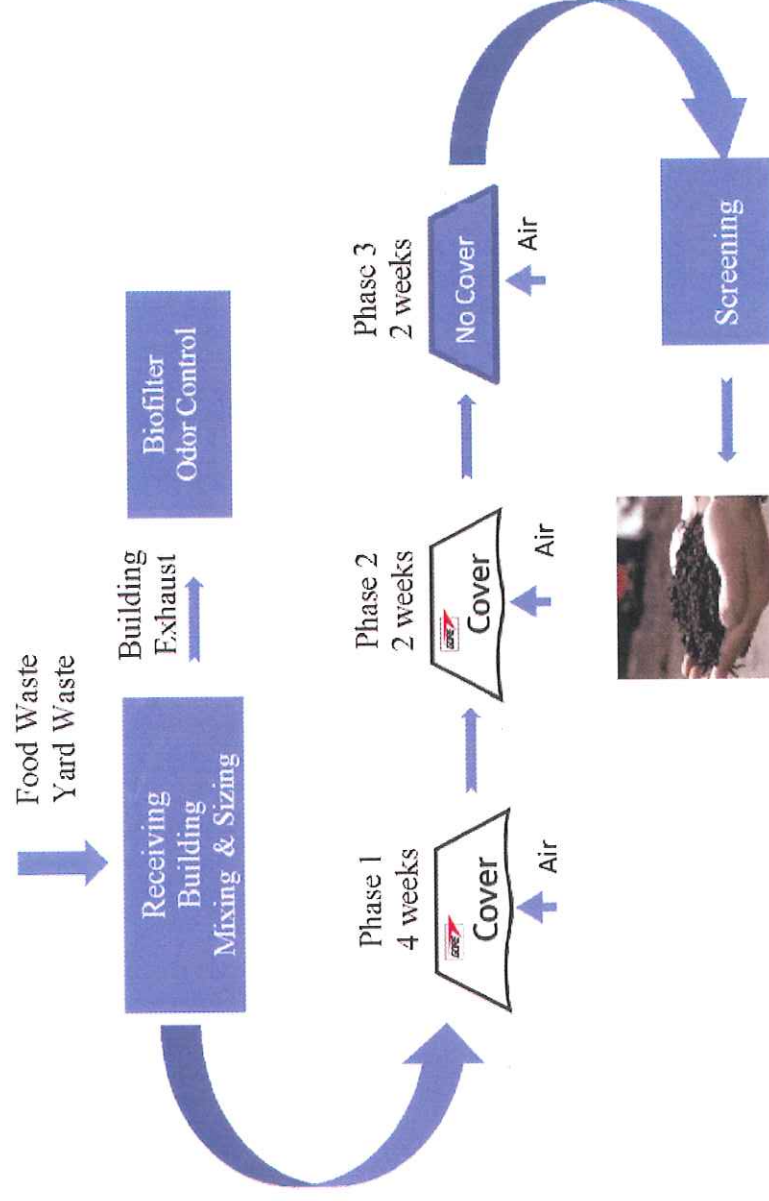
Aerial View Of Wilmington Facility



Peninsula Compost Company



Compost Flow Diagram



Weighing In Bound Food

COMPOST FACILITY



Peninsula Compost Company



Receiving Building

COMPOST FACILITY



Peninsula Compost Company

COMPOST FACILITY



Source Separated Food



Peninsula Compost Company



Acceptable Waste Material

Peninsula Compost Company will accept only biodegradable waste materials. Metal, glass, plastic, or other non-biodegradable materials will not be accepted.

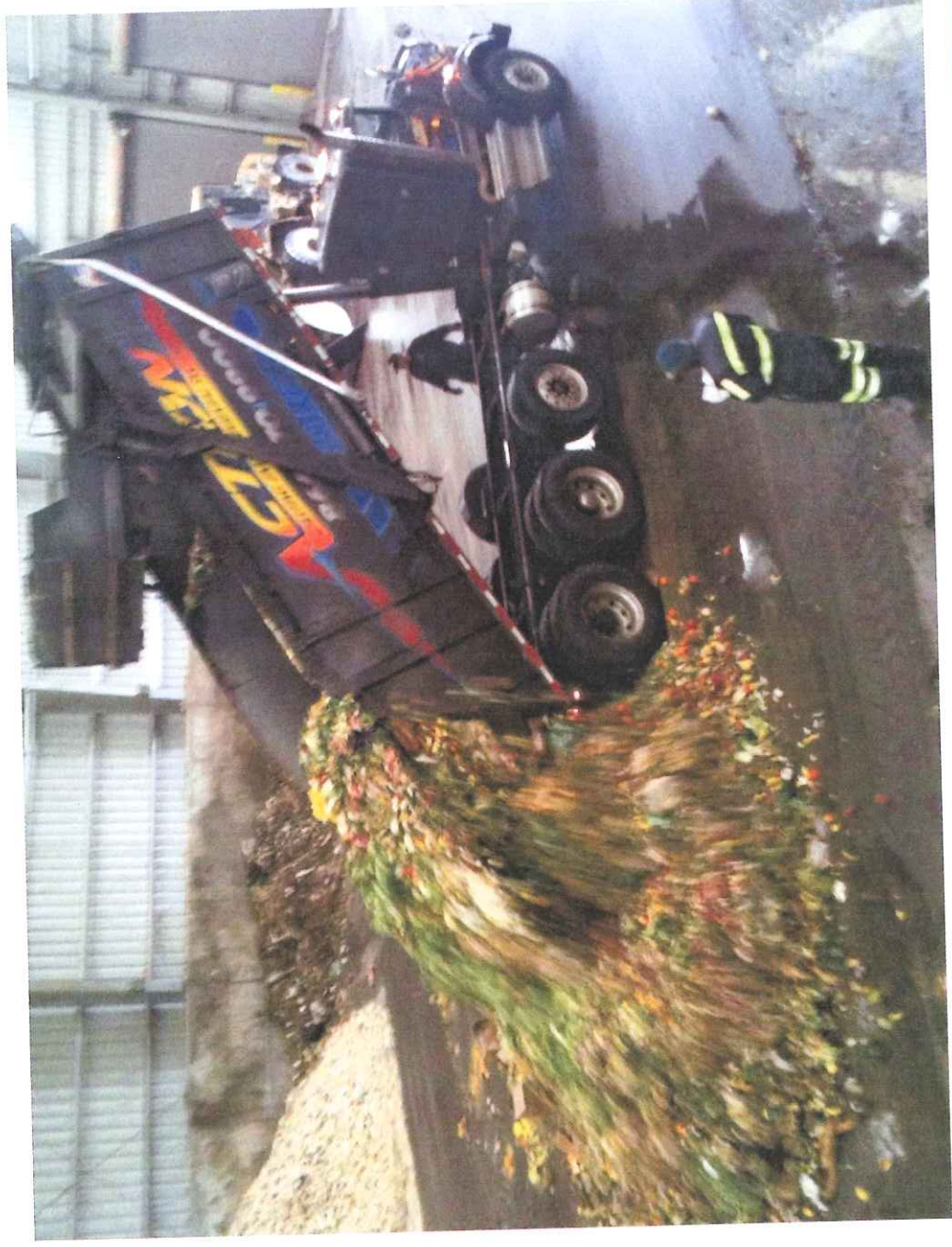
Acceptable Waste Material

- | | |
|---|---|
| <ul style="list-style-type: none"> • Floral <ul style="list-style-type: none"> – Spoiled flowers, trims, wrapping paper, paper towels • Bakery Produce <ul style="list-style-type: none"> – Vegetables, fruits, salads, fruit bar wastes, fruit and vegetable trims – All types of old breads and bakery and bakery waste, excess batter, lining paper • Dairy / Deli / Seafood <ul style="list-style-type: none"> – Any dairy, deli, seafood waste, soiled paper • Grocery <ul style="list-style-type: none"> – Post date and spilled items, all dry goods (pasta, beans, flour, rice, cereal, sugar, coffee, tea, etc) | <ul style="list-style-type: none"> • Paper <ul style="list-style-type: none"> – Waxed and plain cardboard, cardboard tubing, tissue, paper towels, paper placemats, napkins, coin wrappers, etc. • Frozen Food <ul style="list-style-type: none"> – All frozen foods including vegetables, fruits, meats, fish, poultry, soiled paper • Yard Waste <ul style="list-style-type: none"> – Brush, leaves, grass, clean wood, clearing debris, Christmas trees, stumps, bushes, etc. • Paper Materials <ul style="list-style-type: none"> – Soiled or clean paper, cardboard waxed or plain, cardboard egg cartons and fruit trays, or any paper or cardboard product • Animal Bedding <ul style="list-style-type: none"> – Wood chip or straw horse or animal bedding |
|---|---|



COMPOST FACILITY

Receiving Building Inspection



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Blending and Shredding

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Peninsula Compost Company



Biofilter Odor Control

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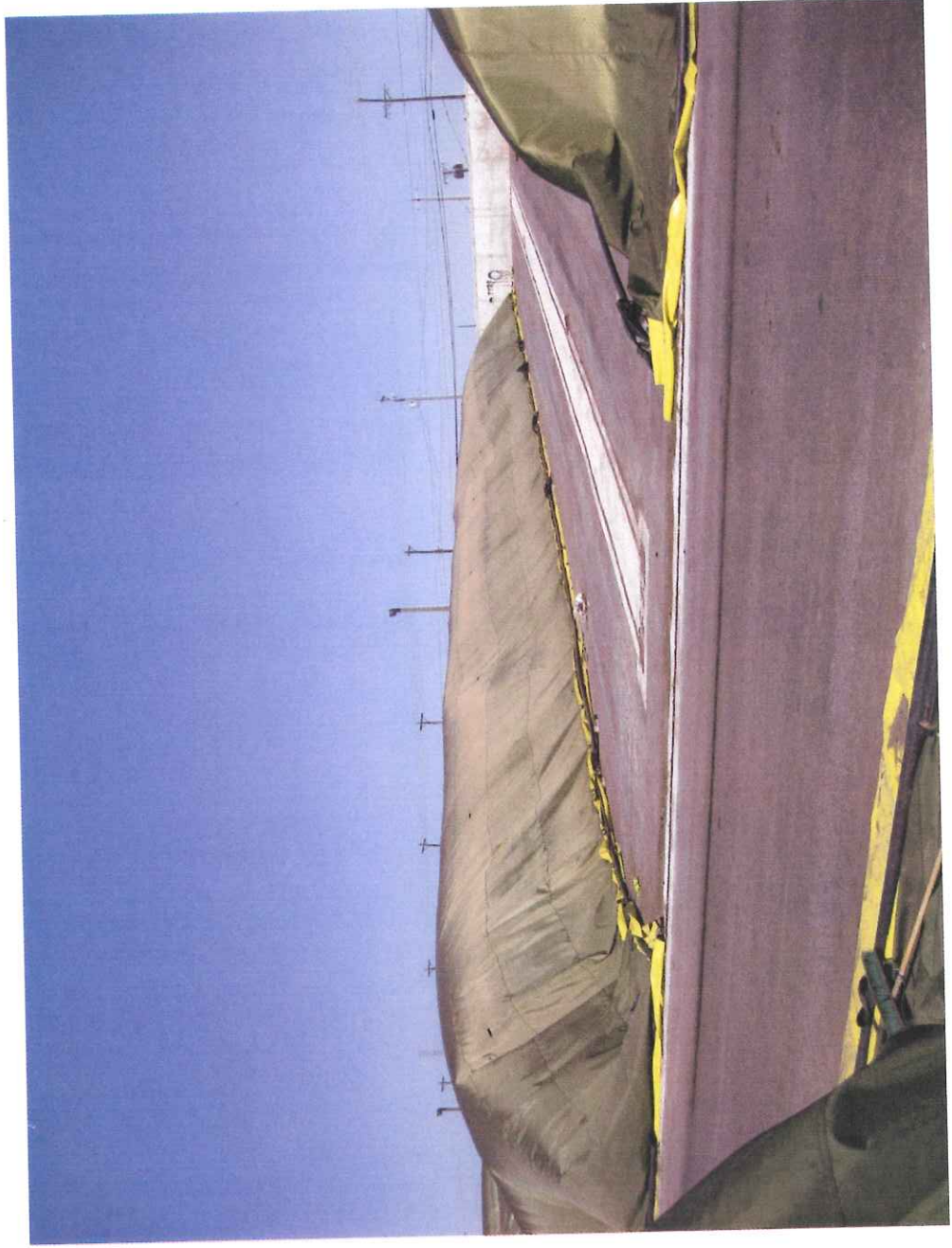


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Gore Covers



Peninsula Compost Company

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Cover Handling Machine

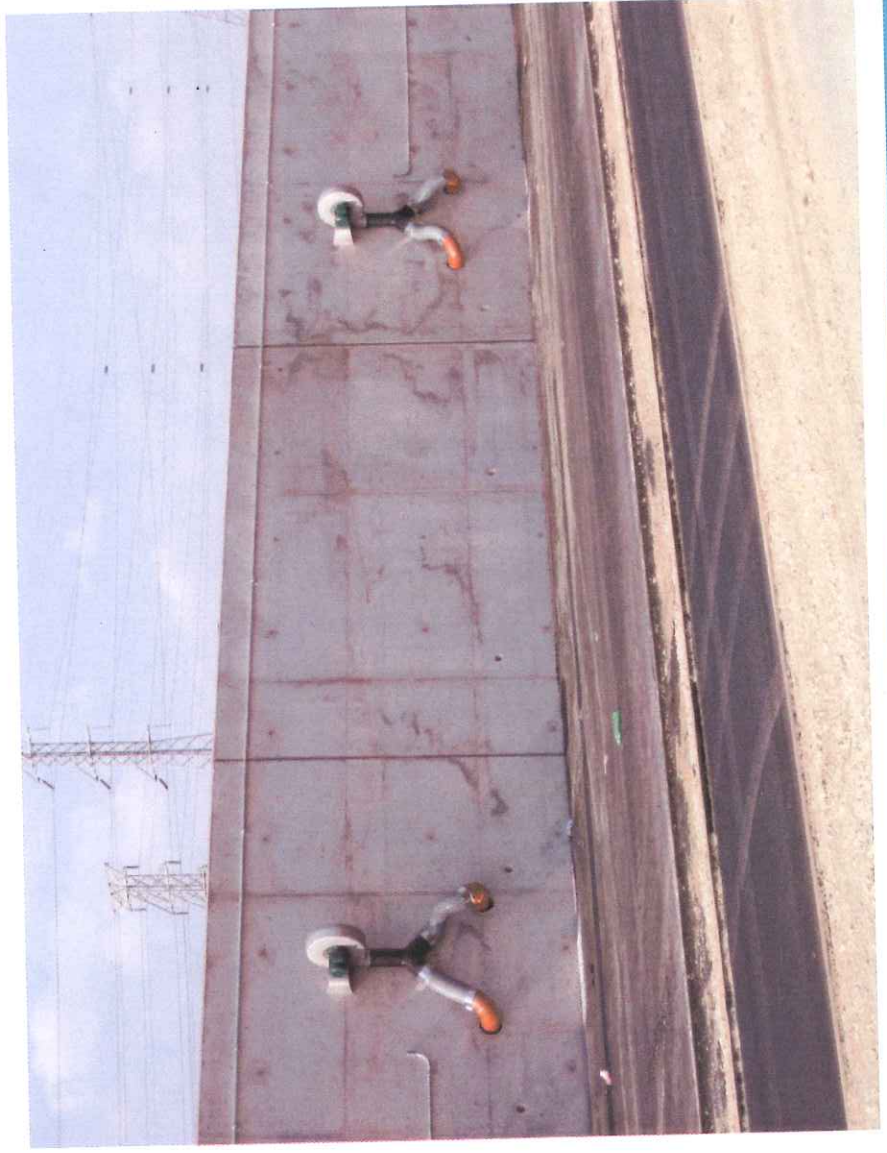


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Aeration Blowers

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Compost Screening



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The End Result

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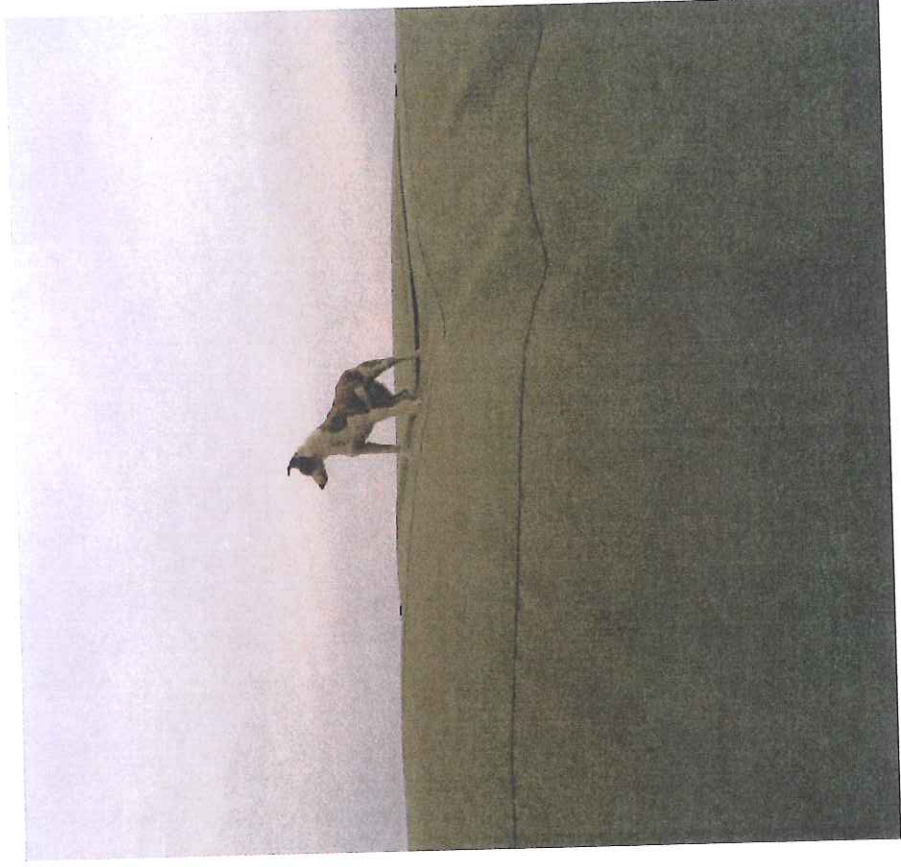


Peninsula Compost Company

COMPOST FACILITY



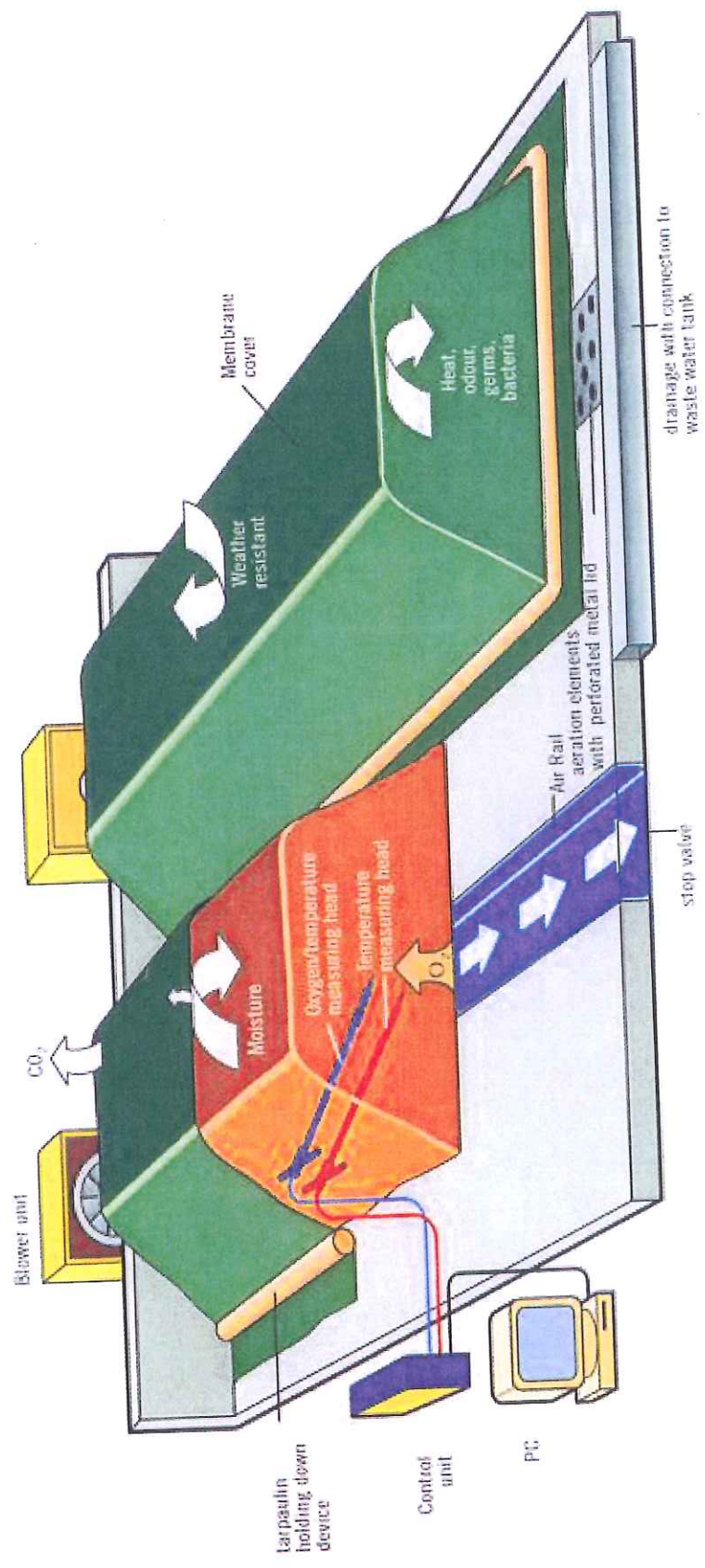
Super Cooper the Compost Dog



Peninsula Compost Company

COMPOST FACILITY

GORE™ COVER SYSTEM



Peninsula Compost Company



Gore Cover System

- Proven solution for all Composting Applications
- Simple and Flexible Technology
- Solid track record based on 15 year plus experience
- Encapsulated System or "In-Vessel" approved
- Site capacity range from 3,000 t/y to 200,000 + t/y
- 150 + systems experience in different 27 countries worldwide



Environmental Benefits

- Reduced Green House Gas
- Beneficial Use of Organic Material
- Collection of Leachate
- Conserve Landfill Space

EPA: United States Environmental Protection Agency

[A-Z index](#)

News Releases By Date

The East Coast's Largest Food Composting Facility Opens Today in Wilmington, Del.

Release date: 04/22/2010

Contact Information: Donna Heron 215-814-5113 or heron.donna@epa.gov

WILMINGTON (April 22, 2010) – Today – Earth Day – is the grand opening of the Wilmington Organic Recycling Center. This facility will take food and yard waste from large waste generators like schools, hospitals, restaurants and supermarkets and turn it into usable garden compost that will be sold at retail outlets. As a Sustainability Partner with EPA, the facility will work to make its operations as “green” as possible.

Taking action to reduce greenhouse gases is one of EPA’s top priorities. Many human activities release greenhouse gases into the atmosphere and we know that greenhouse gases trap heat. If human activities continue to release greenhouse gases at or above the current rate, we will continue to increase average temperatures around the globe.

When the Wilmington Organic Recycling Center (WORC) reaches its full capacity, it will reduce greenhouse gases equivalent to taking 18,000 cars off the road each year.

In welcoming Wilmington Organic Recycling Center as a Sustainability Partner, Regional Administrator Shawn M. Garvin pointed out that keeping waste out of landfills will significantly help reduce the release of greenhouse gases into the atmosphere.

“Composting is an environmentally friendly alternative for dealing with food and yard waste. Instead of sending the waste to landfills where it will produce methane, a greenhouse gas, the waste will be transformed into a useful garden product,” said Garvin, who signed the partnership agreement with Scott Woods, CEO of the Peninsula Compost Group, one of three partners who developed and operate the composting facility.

Landfills are the second-largest human-related source of methane in the U.S., accounting for 23 percent of all methane emissions in 2007. Methane is generated in landfills and open dumps as waste decomposes without oxygen.

Methane remains in the atmosphere for approximately nine to 15 years. Human-influenced sources of methane include landfills, natural gas and petroleum systems, agricultural activities, coal mining, stationary and mobile combustion, wastewater treatment, and certain industrial processes.

The overall goal of the Sustainability Partnership is to minimize the use of energy, resources and waste generation in the mid-Atlantic states by working with businesses and institutions with large environmental footprints and sharing best practices. The partnership initiative offers a holistic approach to help organizations “go green” in a way that often saves money and makes good business sense.

The Peninsula Compost Group, LLC, is an organics solutions company. The other WORC partners are EDiS Company of Wilmington, a green construction company and Port Contractors of New Castle, a materials handling specialists.

For more information on Composting go to: <http://www.epa.gov/wastes/conserve/rrr/composting/>.

For more information on Greenhouse Gases go to: <http://www.epa.gov/osw/conserve/tools/payt/tools/gases.htm>.



Lake County Florida

**Solid Waste Alternative Task Force Meeting
Organic Compost Presentation**

January 10, 2011

By: Randy Messer, FDS Disposal Inc. & Peninsula Compost



Wastes - Resource Conservation - Reduce, Reuse,

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Basic Information

[Organic Materials](#) | [What to Compost](#) | [What Not to Compost](#)

Compost is organic material that can be used as a soil amendment or as a medium to grow plants. Mature compost is a stable material with a content called humus that is dark brown or black and has a soil-like, earthy smell. It is created by: combining organic wastes (e.g., yard trimmings, food wastes, manures) in proper ratios into piles, rows, or vessels; adding bulking agents (e.g., wood chips) as necessary to accelerate the breakdown of organic materials; and allowing the finished material to fully stabilize and mature through a curing process.



Compost Pile - Photo Courtesy of Campaign Recycle Maui Inc./Compost Maui

Natural composting, or biological decomposition, began with the first plants on earth and has been going on ever since. As vegetation falls to the ground, it slowly decays, providing minerals and nutrients needed for plants, animals, and microorganisms. Mature compost, however, includes the production of high temperatures to destroy pathogens and weed seeds that natural decomposition does not destroy.

Did You Know That Compost Can...

- Suppress plant diseases and pests.
- Reduce or eliminate the need for chemical fertilizers.
- Promote higher yields of agricultural crops.
- Facilitate reforestation, wetlands restoration, and habitat revitalization efforts by amending contaminated, compacted, and marginal soils.
- Cost-effectively remediate soils contaminated by hazardous waste.
- Remove solids, oil, grease, and heavy metals from stormwater runoff.
- Capture and destroy 99.6 percent of industrial volatile organic chemicals (VOCs) in contaminated air.
- Provide cost savings of at least 50 percent over conventional soil, water, and air pollution remediation technologies, where applicable.

Organic Materials

Yard trimmings and food residuals together constitute 23 percent of the U.S. waste stream, as documented by EPA. An estimated 56.9 percent of yard trimmings were recovered for composting or grasscycled in 2000, a dramatic increase from the 12 percent recovery rate in 1990. Accompanying this surge in yard waste recovery is a composting industry that has grown from less than 1,000 facilities in 1988 to nearly 3,800 in 2000. Once dominated by public sector operations, the composting industry is increasingly entrepreneurial and private-sector driven, led by firms that add value to compost products through processing and marketing. Compost prices have been as high as \$26 per ton for landscape mulch to more than \$100 per ton for high-grade compost, which is bagged and sold at the retail level.



Digging in a Compost Pile with a Shovel

While yard trimmings recovery typically involves leaf compost and mulch, yard trimmings can also be combined with other organic waste, such as food residuals, animal manure, and biosolids to produce a variety of products with slightly different chemical and physical characteristics. In contrast to yard trimmings recovery, only 2.6 percent of food waste was composted in 2000. The cost-prohibitive nature of residential food waste separation and collection is the primary deterrent to expanding food waste recovery efforts. Yet in many communities, edible food residuals are donated to the needy, while inedible food residuals are blended into compost or reprocessed into animal feed. In some areas, composting operations are working with high-volume commercial and institutional food producers to recover their food byproducts, saving these firms significant disposal costs. For more information on organic materials, visit our [Organic Materials](#) Web site.

What to Compost - The IN List

- Animal manure
- Cardboard rolls
- Clean paper
- Coffee grounds and filters
- Cotton rags
- Dryer and vacuum cleaner lint
- Eggshells
- Fireplace ashes
- Fruits and vegetables
- Grass clippings
- Hair and fur
- Hay and straw
- Houseplants
- Leaves
- Nut shells
- Sawdust
- Shredded newspaper
- Tea bags
- Wood chips
- Wool rags
- Yard trimmings

What Not to Compost - The OUT List

Leave Out/Reason Why

- Black walnut tree leaves or twigs
Releases substances that might be harmful to plants
- Coal or charcoal ash
Might contain substances harmful to plants

- Dairy products (e.g., butter, milk, sour cream, yogurt) and eggs
Create odor problems and attract pests such as rodents and flies
<http://www.epa.gov/epawaste/conservation/rrr/composting/basic.htm>
Last updated on Thursday, March 11, 2010
- Diseased or insect-ridden plants
Diseases or insects might survive and be transferred back to other plants
- Fats, grease, lard, or oils
Create odor problems and attract pests such as rodents and flies
- Meat or fish bones and scraps
Create odor problems and attract pests such as rodents and flies
- Pet wastes (e.g., dog or cat feces, soiled cat litter)
Might contain parasites, bacteria, germs, pathogens, and viruses harmful to humans
- Yard trimmings treated with chemical pesticides
Might kill beneficial composting organisms

NOTE: Finished compost can be applied to lawns and gardens to help condition the soil and replenish nutrients. Compost, however, should not be used as potting soil for houseplants because of the presence of weed and grass seeds.



Wastes - Resource Conservation - Reduce, Reuse, Recycle - Composting Resource Conservation Reduce, Reuse, Recycle Composting Environmental Benefits

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Environmental Benefits

Compost use can result in a variety of environmental benefits. The following are a few of the most important benefits:

Compost enriches soils

Compost has the ability to help regenerate poor soils. The composting process encourages the production of beneficial micro-organisms (mainly bacteria and fungi) which in turn break down organic matter to create humus. Humus--a rich nutrient-filled material--increases the nutrient content in soils and helps soils retain moisture. Compost has also been shown to suppress plant diseases and pests, reduce or eliminate the need for chemical fertilizers, and promote higher yields of agricultural crops.



Man Holding Handful of Compost -
 Photo Courtesy of Jepson Prairie
 Organics

Compost helps cleanup (remediate) contaminated soil

The composting process has been shown to absorb odors and treat semivolatile and volatile organic compounds (VOCs), including heating fuels, polyaromatic hydrocarbons (PAHs), and explosives. It has also been shown to bind heavy metals and prevent them from migrating to water resources or being absorbed by plants. The compost process degrades and, in some cases, completely eliminates wood preservatives, pesticides, and both chlorinated and nonchlorinated hydrocarbons in contaminated soils.

Compost helps prevent pollution

Composting organic materials that have been diverted from landfills ultimately avoids the production of methane and leachate formulation in the landfills. Compost has the ability to prevent pollutants in stormwater runoff from reaching surface water resources. Compost has also been shown to prevent erosion and silting on embankments parallel to creeks, lakes, and rivers, and prevents erosion and turf loss on roadsides, hillsides, playing fields, and golf courses.

Using compost offers economic benefits<http://www.epa.gov/epawaste/conservation/rrr/composting/benefits.htm>

Last updated on Tuesday, October 07, 2008

Using compost can reduce the need for water, fertilizers, and pesticides. It serves as a marketable commodity and is a low-cost alternative to standard landfill cover and artificial soil amendments. Composting also extends municipal landfill life by diverting organic materials from landfills and provides a less costly alternative to conventional methods of remediating (cleaning) contaminated soil.



Compost Used as Erosion
Deterrent



Wastes - Resource Conservation - Reduce, Reuse, Recycle
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Science/Technology

Understanding the Composting Process

One of the most important steps for evaluating composting options is to become familiar with how the composting process works. Before you begin composting or start a composting program, you should understand the five primary variables that must be "controlled" during composting. These include the following:



Feedstock and nutrient balance. Controlled decomposition requires a proper balance of "green" organic materials (e.g., grass clippings, food scraps, manure), which contain large amounts of nitrogen, and "brown" organic materials (e.g., dry leaves, wood chips, branches), which contain large amounts of carbon but little nitrogen. Obtaining the right nutrient mix requires experimentation and patience and is part of the art and science of composting.

Particle size. Grinding, chipping, and shredding materials increases the surface area on which the microorganism can feed. Smaller particles also produce a more homogeneous compost mixture and improve pile insulation to help maintain optimum temperatures (see below). If the particles are too small, however, they might prevent air from flowing freely through the pile.

Moisture content. Microorganisms living in a compost pile need an adequate amount of moisture to survive. Water is the key element that helps transport substances within the compost pile and makes the nutrients in organic material accessible to the microbes. Organic material contains some moisture in varying amounts, but moisture also might come in the form of rainfall or intentional watering.

Oxygen flow. Turning the pile, placing the pile on a series of pipes, or including bulking agents such as wood chips and shredded newspaper all help aerate the pile. Aerating the pile allows decomposition to occur at a faster rate than anaerobic conditions. Care must be taken, however, not to provide too much oxygen, which can dry out the pile and impede the composting process.

Temperature. Microorganisms require a certain temperature range for optimal activity. Certain temperatures promote rapid composting and destroy pathogens and weed seeds. Microbial activity can raise the temperature of the pile's core to at least 140 °F. If the temperature does not increase, anaerobic conditions (i.e., rotting) occur. Controlling the previous four factors can bring about the proper temperature.

Methods of Composting

<http://www.epa.gov/epawaste/conservation/rrr/composting/science.htm>
Last updated on Tuesday, October 07, 2008

Composting takes on many forms, from simple and inexpensive backyard or onsite composting methods to more expensive and high-tech methods such as in-vessel composting. Composting varies as much in its complexity as in the range of organic materials recovered. The most common composting methods are listed in order of increasing costs and levels of technology required and are described in greater detail on the following pages:

Backyard or Onsite Composting (including Grasscycling)
Vermicomposting
Aerated (Turned) Windrow Composting
Aerated Static Pile Composting
In-vessel Composting

After reviewing the science of composting above, select an appropriate method or combination of methods that will best meet your needs. Will backyard composting suffice for reducing residential volume, or should you invest in equipment and labor for larger volumes from restaurants or other businesses? Selecting the right composting equipment at an affordable price also requires careful research. Hundreds of vendors sell composting equipment and there are many variations on each type of equipment.

Composting Challenges

Challenges for the composting industry as a whole include a lack of consistent product quality, market research and planning, investment, accepted national compost specifications, and sophisticated product marketing. In addition, compost end uses range from city and county landscaping to niche markets such as soil remediation. Government agencies could play a larger role by increasing purchases and promotion of compost products. New technologies allow compost companies to tailor their products to specific end-uses, increasing the market value of the material. In fact, more and more compost producers are engineering multiple compost products for applications as diverse as bioremediation of contaminated soil and erosion control at construction sites. Many composting companies are packaging and marketing compost in home repair, garden center, and other retail outlets. Some companies use compost to control odors through new process technologies such as biofilters, while still others are using compost as a filter in water treatment systems.



Man Holding Handful of Compost - Photo Courtesy of Jepson Prairie Organics

Learn More About Environmentally Safe Ways to Compost

Please see Chapter 7 of EPA's Decision-Maker's Guide to Solid Waste Management (58 pp, 1.7MB, [About PDF](#)), Second Edition (EPA530-R-95-041, September 1997) for more guidance on environmentally safe ways to compost.